

City of Concord Planning Board

Project Summary Sheet Traffic Monitoring Study

Project Name: CVS & Tropic Star Development (2009-04)
Applicant & Owner: Burger King Corporation, the Hall 2001 Family Rev. Trust, et. al.
Address: 157 Loudon Road (northwest corner of Loudon Rd. & East Side Dr.)
Map/Block/Lot: 114D/3/10

PUBLIC HEARING:

In accordance with the recommendation from the office of the City Solicitor, this item appears on the agenda as a public hearing and notification via certified mail was served to abutters and the current property owner of 157 Loudon Road.

Because the application for CVS & Burger King was previously determined to be complete and there is no new application currently under consideration, the determination of completeness process does not apply. However, a public hearing is required, therefore, Staff recommends that the Board Opens the Public Hearing.

PREVIOUS APPROVALS:

After several appearances before the Planning Board, CVS & Burger King were conditionally approved by the Board on August 19, 2009. Subsequently, the applicant submitted revised plans to the Board for their meeting held on September 15, 2010, at which time the Board granted conditional final approval. The September 15th approval supersedes the August 19th approval. A copy of the final decision letter dated September 16, 2010 is attached for the Board's convenience.

Condition number two of the Board's approval (please refer to attached decision letter) requires monitoring of the East Side Drive driveway intersection beginning six months after both the Burger King and CVS are open for business and then annually for three (3) years thereafter. The City has been monitoring the movements and noted numerous illegal left turns in and out of the site from East Side Drive. The City is holding bond money to install the center raised median (please refer to attached sketch) on East Side Drive, should the monitoring reports reveal a need to do so. The Engineering Division recommended that this item be placed on a Planning Board agenda. City Traffic Engineer Rob Mack's review of the applicant's final traffic monitoring study is attached.

TRAFFIC MONITORING STUDY:

The following are excerpts taken from City Traffic Engineer Rob Mack's Traffic Monitoring Study for East Side Drive at the CVS Site Driveway Intersection. Please see enclosed memorandum dated June 10, 2015 from Robert J. Mack, P.E., P.T.O.E. to Nancy Larson.

Left Turn Violations

"As reported last year, a continuing concern by staff is the ongoing and frequent violation of the left turn restriction posted from East Side Drive into the CVS site driveway. While a legal turn in the pre-build condition, this turn was prohibited in the post-build condition. Although several No Left Turn signs are posted, violations were commonly observed by staff following opening of the site in 2012. Pernaw's May 2014 and 2015 counts indicated 26 and 15 illegal left turns during the weekday 4-6 PM period and 36 and 34 illegal left turns during the Saturday 11AM-2 PM period, respectively."

"Staff had been able to automatically count occurrences of this illegal left turn by using a traffic signal video detector located at the Loudon/East Side intersection. A detector summary for the month of June 2014 indicated 883 infractions, or an average of about 29 per day. Police have continued to enforce the left-turn restriction, issuing both warnings and tickets. A common infraction includes vehicles turning left into the 'exit only' part of the driveway in spite of the heavily-marked pavement arrows indicating wrong-way movement. It appears that substantial No Left Turn signing, related pavement markings and enforcement efforts, alone, have little effect on promoting the left-turn restriction required in the site plan approval."

Crash History

"Concord Police Department crash history at this driveway intersection has been summarized for: the four-year 2008 to 2011 pre-build condition; the initial nine-month October 2012 to June 2013 post-build period, the second-year post-build period from June 2013 to May 2014; and the latest post-build period of May 2014 to May 2015. In the pre-build condition there were 9 reported crashes related to the subject driveway intersection averaging 2.25 crashes per year. In the first 9-month post-build condition there have were four reported crashes, or an average of 5.33 crashes per year (three related to the illegal left turn in, and one related to the left out of the driveway). No crashes were reported at this intersection during the 12-month reporting periods through May 2014 and May 2015, respectively. Regarding the 2.75 year long post-build condition, the 4 reported crashes reflect an average of 1.47 crashes per year."

Traffic Monitoring Summary

In Summary, Mr. Mack notes that "Illegal left-turn movements here remain quite high in spite of supplemental and significant enforcement efforts by the city. Three of the four crashes reported at this intersection since the site opened have been related to this illegal left-turn movement. It appears that multiple-posted left-turn restrictions, related pavement markings and targeted enforcement efforts have had little effect on promoting this left-turn restriction as required in the site plan approval. This movement was originally restricted for the following reasons:

- The left-turn across two lanes of stopped/stopping westbound traffic is a safety concern;
- Left turns from East Side Drive can impede heavy eastbound through traffic coming from the signal as left-turners block the through lane; and

- All ‘illegal’ turns here can otherwise be made by simply turning right into the CVS driveway from Loudon Road.”

RECOMMENDATION:

The Board should vote as to whether or not they recommend moving forward with construction of the raised median to satisfy the conditions of approval (specifically, condition number 3 in attached decision letter). **Because of the above concerns related to the illegal left turn from East Side Drive, Engineering Services recommends that the Board consider the installation of the raised median at this driveway location per the concept option provided by the applicant during the site plan approval process (please refer to attached sketch).**

s:\plan\development review\project files\2015\2009-04 cvs_tropic star devel_improvements to east side
dr\traffic monitoring study_east side dr.doc

Prepared by: NEL



CITY OF CONCORD
NEW HAMPSHIRE
Community Development Department
Engineering Services Division

City Hall • 41 Green Street • Concord, NH 03301 • tel. (603) 225-8520 • fax (603) 230-3630

TO: Nancy Larson
City Planner

FROM: Robert J. Mack, P.E., P.T.O.E.
Traffic Engineer

DATE: June 10, 2015

SUBJECT: Traffic Monitoring Study – Years 1, 2 and 3
East Side Drive at the CVS Site Driveway Intersection
Tropic Star Development (CVS-Loudon Road)

This memorandum reflects staff review of the third year of post-development traffic monitoring as documented by Steven G. Pernaw & Company, Inc. (Pernaw), in its report dated May 27, 2015.¹ Staff's summary of findings from Pernaw's 2013 first-year² and 2014 second year³ monitoring reports are also included. These follow-up reports are a condition of the former site plan approval, requiring monitoring of traffic volumes, queues and crashes on East Side Drive at the CVS site driveway location. This Pernaw report reflects the third and final year of the required three-year post-development traffic monitoring program. In general, the reports are responsive to the requirements of the Planning Board's condition of approval.

Traffic Volumes

Pre- and post-development manual turning movement counts have been conducted at the East Side Drive/site driveway intersection on a Thursday (4-6PM) and Saturday (11-2PM). The most recent counts for the year-three study were conducted on May 7 and 9, 2015. Weekday and Saturday peak hour through volumes along East Side Drive have increased by less than two percent between the 2011 pre-construction period and the average of the post-construction period through 2015.

¹ Stephen G. Pernaw & Company, Inc., Post-Development Traffic Monitoring Program, CVS Pharmacy, Concord, New Hampshire, dated May 2015.

² Stephen G. Pernaw & Company, Inc., Post-Development Traffic Monitoring Program, CVS Pharmacy, Concord, New Hampshire, dated July 2014.

³ Stephen G. Pernaw & Company, Inc., Post-Development Traffic Monitoring Program, CVS Pharmacy, Concord, New Hampshire, dated July 2013.

Pre-development (2011) site driveway volumes (to/from East Side Drive) were 24 trips during the weekday PM peak hour and 50 trips during the Saturday midday peak hour, respectively. After the site redevelopment, these volumes were growing through 2013 and appeared to have levelled off in 2014 and 2015, averaging 70 trips during the weekday PM peak hour and 94 trips during the Saturday midday peak hour, respectively. Current driveway volumes are somewhat comparable to originally-projected driveway volumes of 82 during the weekday PM peak hour and 92 trips during the Saturday midday peak hour. Note that a similar comparison cannot be made for the overall site traffic generation since data is not included for the two site driveways on Loudon Road.

Left Turn Violations

As reported last year, a continuing concern by staff is the ongoing and frequent violation of the left turn restriction posted from East Side Drive into the CVS site driveway. While a legal turn in the pre-build condition, this turn was prohibited in the post-build condition. Although several No Left Turn signs are posted, violations were commonly observed by staff following opening of the site in 2012. Pernaw's May 2014 and 2015 counts indicated 26 and 15 illegal left turns during the weekday 4-6 PM period and 36 and 34 illegal left turns during the Saturday 11AM-2 PM period, respectively.

Staff had been able to automatically count occurrences of this illegal left turn by using a traffic signal video detector located at the Loudon/East Side intersection. A detector summary for the month of June 2014 indicated 883 infractions, or an average of about 29 per day. Police have continued to enforce the left-turn restriction, issuing both warnings and tickets. A common infraction includes vehicles turning left into the 'exit only' part of the driveway in spite of the heavily-marked pavement arrows indicating wrong-way movement. It appears that substantial No Left Turn signing, related pavement markings and enforcement efforts, alone, have little effect on promoting the left-turn restriction required in the site plan approval.

Staff also notes that the median-mounted sign on Loudon Road at the Burger King driveway exit has been knocked down by traffic impacts on many occasions. It is reasonable to infer that these impacts are related to illegal left turns out of the Burger King driveway.

Traffic Queues on East Side Drive

The site development implemented off-site improvements to East Side Drive and the signal at the Loudon/East Side intersection. Included was a longer two-lane southbound approach to the intersection as well as a revised lane use to allow a double left-turn lane onto Loudon Road eastbound. Pre- and post-build traffic queues on the East Side Drive eastbound approach to the signal were measured during the same weekday and Saturday peak periods in 2013, 2014 and 2015 and indicate an average 22 to 39 percent reduction in 95th percentile traffic queue lengths compared with the 2011 pre-build condition, respectively. This is a substantial reduction in queuing and continues to confirm the effectiveness of the off-site, lane-use improvement. This reported finding is consistent with staff observations.

Crash History

Concord Police Department crash history at this driveway intersection has been summarized for: the four-year 2008 to 2011 pre-build condition; the initial nine-month October 2012 to June 2013 post-build period, the second-year post-build period from June 2013 to May 2014; and the latest

post-build period of May 2014 to May 2015. In the pre-build condition there were 9 reported crashes related to the subject driveway intersection averaging 2.25 crashes per year. In the first 9-month post-build condition there have been four reported crashes, or an average of 5.33 crashes per year (three related to the illegal left turn in, and one related to the left out of the driveway). No crashes were reported at this intersection during the 12-month reporting periods through May 2014 and May 2015, respectively. Regarding the 2.75 year long post-build condition, the 4 reported crashes reflect an average of 1.47 crashes per year.

Summary

It appears that peak-period traffic delays on the East Side Drive approach to the Loudon/East Side signal continue to be measurably reduced as a result of the off-site lane improvements associated with the project. On the other hand, staff notes a continued concern regarding illegal left-turn movements at the site driveway on East Side Drive. This movement was originally restricted for the following reasons: the left-turn across two lanes of stopped/stopping westbound traffic is a safety concern; left turns from East Side Drive can impede heavy eastbound through traffic coming from the signal as left-turners block the through lane; and all 'illegal' turns here can otherwise be made by simply turning right into the CVS driveway from Loudon Road.

Illegal left-turn movements here remain quite high in spite of supplemental and significant enforcement efforts by the city. Three of the four crashes reported at this intersection since the site opened have been related to this illegal left-turn movement. It appears that multiple-posted left-turn restrictions, related pavement markings and targeted enforcement efforts have had little effect on promoting this left-turn restriction as required in the site plan approval.

Because of the above concerns related to the illegal left turn from East Side Drive, Engineering Services recommends that the Board consider the installation of raised median at this driveway location per the concept option provided by the applicant during the site plan approval process. The approved site plan intended that these vehicles (about one illegal left turn per five to eight minutes during traffic peaks) enter the site via a right turn from Loudon Road westbound, which is what will occur if median is installed. Another consideration is that vehicles wishing to depart the site via East Side Drive eastbound will also be impacted by a median installation. These vehicles (less than one vehicle per two to four minutes during peaks) would need to exit the site via Loudon Road westbound and circle back to East Side Drive via Burns Avenue, or alter their travel pattern to/from the site to use other street choices.

cc: E. Roberge, L. Aibel, H. Shank

ENG

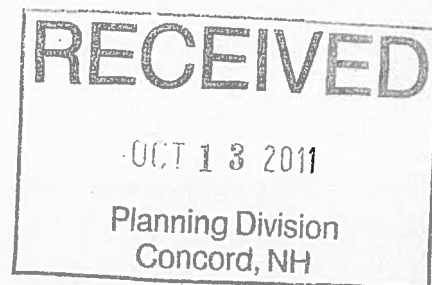
JONES & BEACH ENGINEERS, INC.

85 Portsmouth Avenue
Post Office Box 219
Stratham, NH 03885
Telephone: (603) 772-4746
Fax: (603) 772-0227

Post Office Box 484
Alton, NH 03809
Email: jbe@jonesandbeach.com
www.jonesandbeach.com

October 7, 2010

Concord Planning Department
Attn: Stephen Henninger
41 Green Street
Concord, NH 03301



**Re: East Side Drive Traffic Island Cost Estimate
Proposed Pharmacy & Burger King Restaurant
155 & 157 Loudon Road, Concord, NH
JBE Project No. 05122**


Dear Mr. Henninger,

A request has been made for Jones & Beach Engineers, Inc., to estimate the cost to install a 4' x 180' slope granite curb island to be located at the East Side Drive intersection. Based on a contractor's estimate, I offer the following cost to construct the NHDOT 609.21 (6"x 12") straight granite slope curb island, including the cost for labor and materials to complete the work:

Curb & patch cost 325 linear feet @ \$23.00 per foot	= \$7,475.00
Concrete island 10 yards @ \$150.00 per yard	= \$1,500.00
Traffic control	= \$ 500.00
Total Cost	= \$9,475.00

Please contact me if you have any question or need any additional information. Thank you very much for your time.

Very truly yours,
JONES & BEACH ENGINEERS, INC.

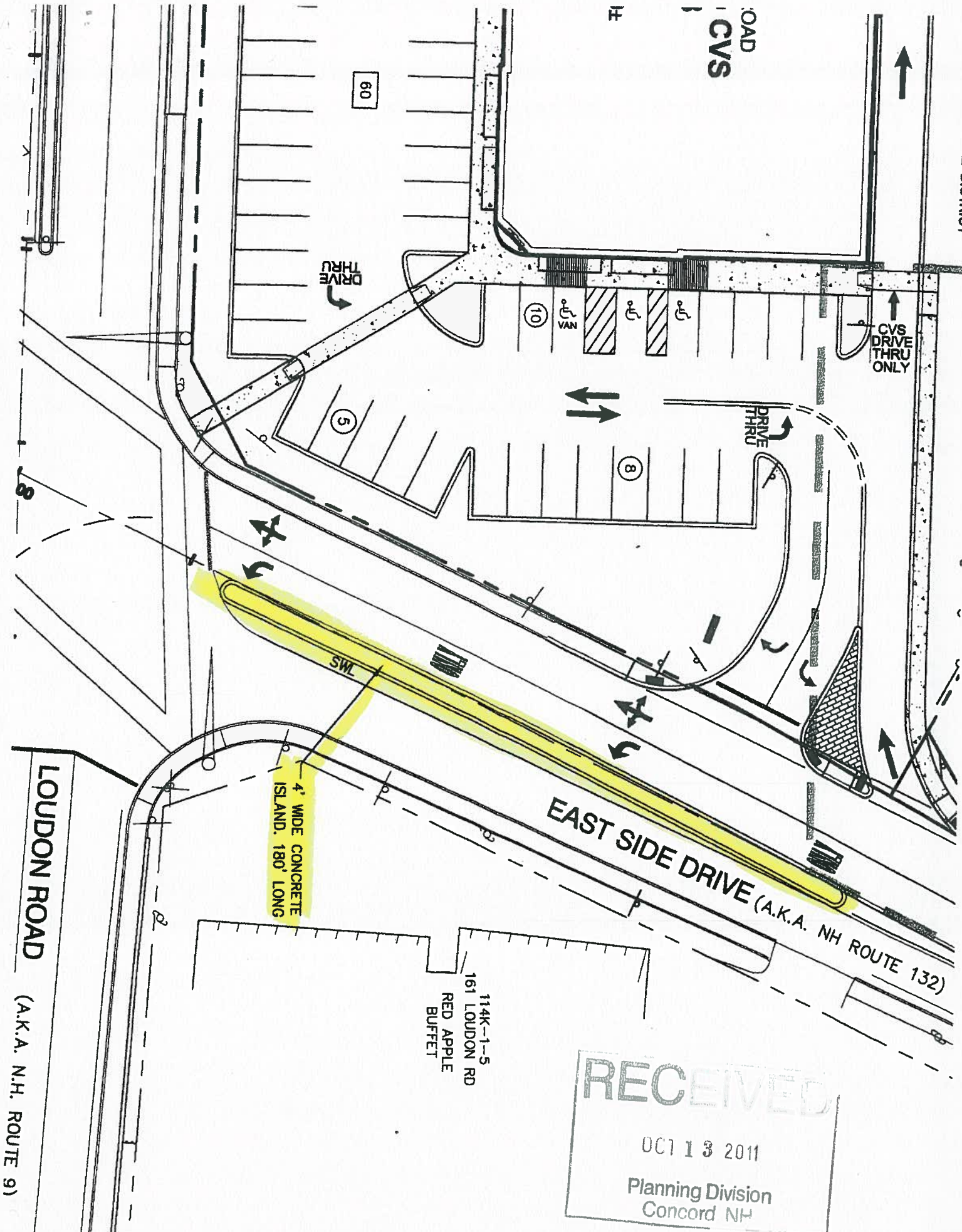

Bradford A. Jones
Vice President

cc: Richard Uchida, Orr & Reno, PA



✓ cold plan C-2
✓ slope curb
✓ curved curb
✓ mobilization
✓ Sawcut
✓ Pavement
✓ Subbase
✓ Signs
✓ Concrete
✓ excavation
x pavement
marking removal
✓ pavement markings

D Urban
E Special
F Signal
B Rural under



RECEIVED
OCT 13 2011
Planning Division
Concord NH

City of Concord

PLANNING BOARD

City Hall • 41 Green Street • Concord, NH 03301 • Tel: (603-225-8515) • Fax: (603-228-2701)

9/16/2010

Wayne Morrill, Vice President
Jones & Beach Engineers, Inc.
PO Box 219
Stratham, NH 03885

Re: Application for Site Plan Approval by Tropic Star Development LLC for a CVS and Burger King at 155 & 157 Loudon Road **2009-4**

Dear Sir:

Please be advised that the City Planning Board, at its regular meeting on September 15, 2009¹⁰, considered a revised site plan submitted by the applicant and granted **Conditional Site Plan** approval for the revised plans for a proposed Burger King and CVS Pharmacy at 155 & 157 Loudon Road. Please be advised that this approval supersedes the August 19, 2009, approval by the Planning Board.

In a related action, the Planning Board also granted a **Conditional Use Permit** pursuant to Article 28-7-11(f), Driveway Separation Alternatives, of the Zoning Ordinance, for two driveways on Loudon Road where one is allowed and for one driveway on East Side Drive with less than the required driveway separation, subject to the following conditions:

1. The East Side Drive driveway access shall be restricted to right in only with left turns into the site from East Side Drive being prohibited.
2. The project's driveway intersection with East Side Drive shall be monitored beginning six months after both the Burger King and CVS proposed for the site are open for business and then annually for three (3) years thereafter. The monitoring plan shall be approved by the Clerk of the Board and the City Engineer prior to the start of demolition, and shall, at a minimum, consist of turning movement counts during the weekday PM peak hour and the Saturday peak hour, accident data along with an evaluation of each accident, and the length of the queue during peak hours on East Side Drive. A pre-build baseline survey shall be completed with the same parameters.
3. If, in the opinion of the City Engineer and Clerk of the Board, a safety problem exists at the project's driveway on East Side Drive, or the increased turning movements at this driveway adversely impact traffic at the intersection of East Side Drive and Loudon Road, or adversely

impact traffic flow on East Side Drive, improvements shall be installed along East Side Drive from Loudon Road extending approximately 200' north of the intersection of Loudon Road.

4. Prior to the issuance of a certificate of approval by the Planning Board Chair (and issuance of any building permits for construction activity on the site), a design for the improvements to East Side Drive, an engineer's construction cost estimate, and a financial guarantee acceptable to the City Engineer shall be provided. The financial guarantee shall remain in place for a four year period after both the Burger King and CVS proposed for the site are open for business.
5. The island in the East Side Drive entrance shall be raised and appropriately landscaped given the need to maintain site distance to the north along East Side Drive.

The Planning Board also granted a **Conditional Use Permit** pursuant to Article 28-7-11 (b), Construction of Fewer Parking Spaces, of the City of Concord Zoning Ordinance, to construct 89 parking spaces where 101 spaces are required. The CUP site plan shows the location of the twelve (12) spaces to be constructed, if the Zoning Administrator determines that parking demand warrants the additional spaces.

The Board also granted approval of the site and building plans under terms of Section 28-9-4(f), Architectural Design Review, of the City of Concord Zoning Ordinance, for a proposed development by Tropic Star Development, LLC at 155 and 157 Loudon Road. The approval does not include any of the signage for either Burger King or CVS, nor does it include approval for the building lighting for CVS on the westerly wall and the drive-up canopy. The signage and lighting are subject to further review and approval by the Planning Board.

Approved Plans - *The approved plans include the following sheets prepared by Jones & Beach Engineers, Inc., Burger King Corporation, and BKA Architects, Inc., along with supporting documentation and colored elevations:*

Sheet #	Sheet Title	Date Prepared
CS	Cover Sheet	Revised 8/12/09
G1	General Notes	Revised 8/12/09
C1	Existing Conditions Plan	Revised 8/12/09
C2	Demolition Plan	Revised 8/12/09
C3	Site Plan	Revised 8/12/09
C4	Grading and Drainage Plan	Revised 8/12/09
C5	Utility Plan	Revised 8/12/09
L1	Lighting Plan	Revised 8/12/09
L2	Landscape Plan	Revised 8/12/09
D1-D7	Detail Plans	Revised 8/12/09
E1	Erosion Control Plan	Revised 8/12/09
A2	Architectural Elevations Plan (Burger King)	Date stamped 8/12/09
A4	Exterior Elevation Plan (CVS)	Revised 8/12/09

Conditions - *The above listed plans were approved subject to the following standard and special conditions:*

Standard Conditions

1. Prior to the issuance of a certificate of approval by the Planning Board Chair (and issuance of any building permits for construction activity on the site), approvals of construction drawings for on-site improvements shall be obtained from the Engineering and Planning Divisions. No construction activity may commence prior to the preconstruction conference.
2. Prior to the issuance of a certificate of approval by the Planning Board Chair (and issuance of any building permits for construction activity on the site), the applicant shall obtain approval of private utility plans from Unitil, Fairpoint Communications and National Grid.
3. Traffic impact fees shall be assessed for any non-residential construction contained within the limits of the approved site plan. The impact fees and procedures shall be those in effect at the time of the issuance of a building permit as set forth in the City of Concord Code of Ordinances, Title IV, Subdivision Code: Chapter 29.2, Public Capital Facilities Impact Fee Ordinance. The specific fees assessed are those contained in Section 29.2.1-1 Assessment and Collection; subsection (b) Computation of the Amount of Impact Fees; Table 3, Transportation Facilities Impact Fee per Variable Unit.
 - a. Transportation Facilities - Retail (5,001 SF to 100,000 SF)
 - b. Transportation Facilities – Fast Food Restaurant w/drive-thru*(See attached worksheet which provides for credits for existing site uses)*
4. The following improvements to be constructed are deemed to be eligible for credits against the assessed traffic impact fees. The procedures for determining the eligibility and the calculation of the credit shall be those in effect at the time of the issuance of a building permit as set forth in the City of Concord Code of Ordinances, Title IV, Subdivision Code: Chapter 29.2, Public Capital Facilities Impact Fee Ordinance.
 - a. The double left turn on East Side Drive and associated improvements at the intersection of East Side Drive and Loudon Road.
5. Prior to the issuance of a certificate of approval by the Planning Board Chair (and issuance of any building permits for construction activity on the site), the applicant will provide to the City Solicitor a financial guarantee for all public improvements in an amount approved by the City Engineer and in a form acceptable to the City Solicitor.
6. No certificate of occupancy for any building or use shall be issued until all public improvements have been substantially completed to the satisfaction of the City Engineer.
7. Prior to the release of a financial guarantee for any public improvement, an as-built plan shall be provided to the City Engineer in a form and content acceptable to the City Engineer.
8. Prior to the issuance of a certificate of approval by the Planning Board Chair (and issuance of any building permits for construction activity on the site), the following easement documents, in a form acceptable to the City Solicitor and suitable for recording in the Merrimack County Registry of Deeds, will be provided to the Planning Division:
 - a) A deed of easement to bring the right-of-way along East Side Drive from Loudon Road to Burns Avenue to a minimum width of 60'.

Special Conditions

9. The East Side Drive driveway access shall be restricted to right in only with left turns into the site from East Side Drive being prohibited.
10. The project driveway on East Side Drive shall be monitored beginning six months after both the Burger King and CVS proposed for the site are open for business and then annually for three (3) years thereafter. The monitoring plan shall be approved by the Clerk of the Board and the City Engineer prior to the start of demolition, and shall, at a minimum, consist of turning movement counts during the weekday PM peak hour and the Saturday peak hour, accident data along with an evaluation of each accident, and the length of the queue during peak hours on East Side Drive. A pre-build baseline survey shall be completed with the same parameters.
11. If, in the opinion of the City Engineer and Clerk of the Board, a safety problem exists at the project's driveway on East Side Drive or the increased turning movements at this driveway adversely impact traffic at the intersection of East Side Drive and Loudon Road, or adversely impact traffic flow on East Side Drive, improvements shall be installed along East Side Drive from Loudon Road extending approximately 200' north of the intersection of Loudon Road.
12. Prior to the issuance of a certificate of approval by the Planning Board Chair (and issuance of any building permits for construction activity on the site), a design for the improvements to East Side Drive, an engineer's construction cost estimate, and a financial guarantee acceptable to the City Engineer shall be provided.
13. Prior to the issuance of a certificate of approval by the Planning Board Chair (and issuance of any building permits for construction activity on the site), an agreement to allow for the interconnection of the Tropic Star Development parking lot with the abutters to the west (parcel 114D-3-11) shall be submitted acceptable to the Clerk of the Board. The agreement needs the flexibility to locate the interconnection where all parties can agree including the tenants, the landowners and the City Planning Board.
14. Prior to the issuance of a certificate of approval by the Planning Board Chair (and issuance of any building permits for construction activity on the site), the companion subdivision creating this development parcel shall be recorded in the Merrimack County Registry of Deeds.
15. The applicant has agreed to provide additional funding to be used at the City's discretion to improve either East Side Drive or Loudon Road in the vicinity of the project to help mitigate the projects off-site impacts on these roadways. The applicant has voluntarily agreed to contribute an additional \$15,000 dollars at the time the project begins construction. The attached agreement is incorporated as part of the approved site plan application.
16. The island in the East Side Drive entrance shall be raised and appropriately landscaped given the need to maintain site distance to the north along East Side Drive.

Once the Conditional Use Permit conditions 1 & 4, and Site Plan approval conditions 1, 2, 4, 5, 8, 9, 12, 13, 14, and 16, as well as the baseline traffic survey in condition 10 are satisfactorily addressed, please contact the City Engineering Division to set up a pre-construction meeting prior to the commencement of construction.

At the time site work is complete, the site will be inspected by City departments to insure that the site and building improvements have been completed in conformity with the plans and conditions approved by the Planning Board. Please note that Section 6.03 (D) of the Board's Site Plan Review Regulations states that: "The Certificate...(of Approval)...shall be valid for a period of two (2) years from the date of resolution of approval. The date of approval for your application is now September 15, 2010.

If you have any questions, please contact me at your convenience.

Sincerely,

Douglas G. Woodward
Clerk

cc: Tropic Star Development, LLC
Burger King Corporation
Hall 2001 Family Trust
Jean B. Chase
Life Safety Officer
City Engineer
City Planner
Zoning Administrator
General Services Director
Attorney Richard Uchida